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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,431	12/05/2003	Todd D. Wakefield	03760.022/5139 P	8399

64100 7590 01/26/2007  
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EXAMINER
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CAO, PHUONG THIAO

ART UNIT	PAPER NUMBER
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2164

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/729,431

Applicant(s)

WAKEFIELD ET AL.

Examiner

Phuong-Thao Cao

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is in response to Amendment filed on 12/12/2006.
2. Claims 1, 3, 9 and 15 have been amended. Currently, claims 1-15 are pending.
3. The filed Terminal Disclaimer is effective to overcome the Double Patenting rejection.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

5. Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
6. Claim 2-8 and 10-15 are objected to as being of improper dependent form: the "A" at the beginning of each claim should be deleted and replaced by the "The".

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the parsed text record" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the parsed text records" in line 11, limitation "the identified attribute extractions" in line 14, and limitation "filtered set of attribute extractions" in line 15. There is insufficient antecedent basis for these limitations in the claim.

Claims 2-8 and 10-15 are rejected as incorporating the deficiencies of claims 1 and 9 upon which they depend.

***Claim Rejections - 35 USC § 101***

9. 35 U.S.C. 101 reads as follows:

Art Unit: 2164

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 1-4, 7-12 and 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 1 and 9, these claims recite the process of generating structured data from unstructured free text, but fail to recite a tangible result.

For a result to be tangible, it must be more than just a thought or a computation; it must have real-world value rather than an abstract result. What has been determined, calculated, selected or decided, etc. without using what has been determined, calculated, selected, decided, etc. in a disclosed practical application or at least making what has been determined, calculated, selected, decided, etc. available for use through some form of conveyance (for example, display, print, sound, transmission, etc.) or at least temporary storage somewhere is not considered a tangible result. For instance, note that the limitations of claims 5, 6, 13 and 14 are not rejected, since they recite the function of storing the data resulting from the operation in a database or a file, whereas (for instance), claim 1 merely cites 'producing a structured data element' as the result.

Claims 2-4, 7, 8, 10-12 and 15 are rejected as incorporating the deficiencies of claims 1 and 9 upon which they depend respectively.

*Claim Rejections - 35 USC § 103*

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao et al. (Publication No US 2003/0120458) in view of Riloff et al. ("An Empirical Approach to Conceptual Case Frame Acquisition", 1998).

As to claim 1, Rao et al. teaches:

"A computer program product located on one or more storage media devices usable to produce structured data from unstructured free text" (see Abstract), said computer program product comprising instructions executable by a computer to perform the functions of:

"accessing a source of data records that contain structured and unstructured data, the unstructured data including free text, and the unstructured data of a particular record containing information related to the structured data in that record" (see Fig. 2, [0008], [0018], [0033]-[0035] wherein each computerized patent record is equivalent to Applicant's "data record");

"linguistically parsing the free text" (see [0081];

"extracting multiple-dimensional relational facts from the parsed free text, the multiple dimensional relational facts relating to the structured data of the data record from which the free

text was taken, and the multiple-dimensional relational facts including a plurality of attributes derived from the free text” (see [0035], [0036] and [0039]-[0044] wherein extracted information regarding a patient is equivalent to Applicant’s “multiple-dimensional relational facts”); and

“producing a structured data element from the filtered set of attribute extractions, said filtered set of attribute extractions containing relational facts relating to said structured data” (see [0035]-[0037] wherein each patient state is equivalent to Applicant’s “structured data element”; also see [0043] for element with name “Cancer”, value “True” and confidence 0.9).

Rao et al. does not teach:

“said extracting step including identifying roles within the parsed text records, each of said extractions containing role information”; and

“applying caseframes to extractions, said applying caseframes producing a filtered set of attribute extractions”.

Riloff et al. teaches:

“said extracting step including identifying roles within the parsed text records, each of said extractions containing role information” (see [page 1, column 2, last paragraph], [page 2, column 2, paragraph 3] and [page 4, column 2, paragraph 3]); and

“applying caseframes to extractions, said applying caseframes producing a filtered set of attribute extractions” (see Abstract, [page 2, column 2, paragraph 3] and [page 3-6, section 3]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Rao et al. by the teaching of Riloff et al. to add the features of identifying roles within the parsed text record and applying caseframes to extractions since both Rao et al. and Riloff et al. pursue in the field of generating structured data from text and

adding these features provides more effective system because conceptual natural language processing systems usually rely on case frame instantiation to recognize events and role objects in text and the case frames generate more cohesive output and produce fewer false hits than the original extraction patterns.

As to claim 9, Rao et al. teaches:

“A method for generating structured data from unstructured free text” (see Abstract), comprising the steps of:

“accessing a source of data records that contain structured and unstructured data, the unstructured data including free text, and the unstructured data of a particular record containing information related to the structured data in that record” (see Fig. 2, [0008], [0018], [0033]-[0035] wherein each computerized patent record is equivalent to Applicant’s “data record”);

“linguistically parsing the free text” (see [0081];

“extracting multiple-dimensional relational facts from the parsed free text, the multiple dimensional relational facts relating to the structured data of the data record from which the free text was taken, and the multiple-dimensional relational facts including a plurality of attributes derived from the free text” (see [0035], [0036] and [0039]-[0044] wherein extracted information regarding a patient is equivalent to Applicant’s “multiple-dimensional relational facts”);

“filtering the identified attribute extractions with a criteria” (see [0010], [0036], and [0042]); and

“producing a structured data element from the filtered set of attribute extractions, said filtered set of attribute extractions containing relational facts relating to said structured data” (see



[0035]-[0037] wherein each patient state is equivalent to Applicant's "structured data element"; also see [0043] for element with name "Cancer", value "True" and confidence 0.9).

Rao et al. does not teach:

"said extracting step including identifying roles within the parsed text records, each of said extractions containing role information"; and

Riloff et al. teaches:

"said extracting step including identifying roles within the parsed text records, each of said extractions containing role information" (see [page 1, column 2, last paragraph], [page 2, column 2, paragraph 3] and [page 4, column 2, paragraph 3]); and

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Rao et al. by the teaching of Riloff et al. to add the feature of identifying roles within the parsed text record , each of said extraction containing role information since both Rao et al. and Riloff et al. pursue in the field of generating structured data from text and adding this feature provides more effective system because conceptual natural language processing systems usually rely on case frame instantiation (set of role assignments) to recognize events and role objects in text and the case frames generate more cohesive output and produce fewer false hits than the original extraction patterns.

As to claims 2 and 10, these claims are rejected based on arguments given above for rejected claims 1 and 9 respectively, and are similarly rejected including the following:

Rao et al. as modified teaches:

“identifying domains of the filtered set of attribute extractions” (see [0010] for the use of domain-specific criteria to infer patient states wherein each patient state is equivalent to Applicant’s “filtered set of attribute extractions” and domain must be identified to be able to select the domain-specific criteria as disclosed).

As to claims 3 and 11, these claims are rejected based on arguments given above for rejected claims 2 and 10 respectively, and are similarly rejected including the following:

Rao et al. as modified does not teach:

“assigning domain roles to the extractions”.

Riloff et al. teaches:

“assigning domain roles to the extractions” (see [page 4, column 2, paragraph 3-4]

wherein conceptual roles is equivalent to Applicant’s “domain roles”); and

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Rao et al. by the teaching of Riloff et al. to add the feature of assigning domain roles to the extractions since both Rao et al. and Riloff et al. pursue in the field of generating structured data from text and adding this feature provides the system an effective way to identifying the types of information that need to be recognized.

As to claims 4 and 12, these claims are rejected based on arguments given above for rejected claims 3 and 11 respectively, and are similarly rejected including the following:

Rao et al. as modified teaches:

“producing relation types” (see [0037], [0043] and [0048] for the patient state which is a collection of variables relating to the patient wherein each patient state is equivalent to Applicant’s “relation type”).

As to claims 5 and 13, these claims are rejected based on arguments given above for rejected claims 1 and 9 respectively, and are similarly rejected including the following:

Rao et al. as modified teaches:

“creating a new database containing the structured data element produced in said producing a structured data element” (see Abstract, [0020] and [0031] wherein data warehouse system that contains structured CPR generated by the mining process is equivalent to Applicant’s “new database”).

As to claims 6 and 14, these claims are rejected based on arguments given above for rejected claims 1 and 9 respectively, and are similarly rejected including the following:

Rao et al. as modified teaches:

“producing a file containing the structured data element produced in said producing a structured data element” (see Abstract, Fig. 3, and [0070]-[0071] wherein the structured CPR is equivalent to Applicant’s “structured data element” and it must be stored in a file).

As to claim 7, this claim is rejected based on arguments given above for rejected claims 1 and 9 respectively, and is similarly rejected including the following:

Rao et al. as modified teaches:

“a computer system including a computer program product according to claim 1, further comprising: a processing unit coupled to said one or more storage media devices, said processing unit being capable of executing said instructions, and an execution command unit, whereby operation of said instructions and said processing unit may be commanded or controlled” (see [0026]-[0030]).

As to claims 8 and 15, these claims are rejected based on arguments given above for rejected claims 1 and 9 respectively, and are similarly rejected including the following:

Rao et al. as modified teaches:

“wherein the structured data element produced by the performance of said producing including reference information to the original free text for construed data” (see [0070]-[0071] wherein information to identify an individual patient is a reference between the original CPR (which including original free text [0034]) and the structured CPR (structured data element)) of that individual patient.

***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong-Thao Cao whose telephone number is (571) 272-2735. The examiner can normally be reached on 8:30 AM - 5:00 PM (Mon - Fri).

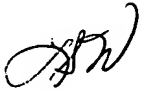
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PTC

January 17, 2007

  
CHARLES RONES  
SUPERVISORY PATENT EXAMINER

 18 January 2007